Please amend claims 1-7 in the following manner:

1. (Amended) A fluid bed reactor or furnace comprising a fluid bed reactor or furnace with a gas phase distributor including a gas phase piping array discharging into a fluid bed of granular solids through a plurality of tuyeres coupled to and mounted beneath the piping array in a vertical elevation such that the granular solids below the piping array are fluidized thereby causing the fluidizing gas in the piping array to indirectly heat the fluidized bed prior to entering the fluidized bed through the tuyeres.

2. (Amended) The fluid bed reactor or furnace of claim 1, wherein the gas phase distributor discharges the fluidizing gas through openings or ports in a bottom portion of the piping array.

3. (Amended) The fluid bed reactor or furnace of claim 2, wherein the gas phase distributor further comprises a heat exchanger in a feed line to the gas phase distributor such that the heat exchanger location is above the fluidizing gas distribution ports and submerged in the fluidized solids, thereby permitting indirect heat transfer from the fluidizing gas prior to the gas phase distributor.

4. (Amended) The fluid bed reactor or furnace of claim 1, further comprising metal parts in the fluid bed of granular solids.

5. (Amended) The fluid bed reactor or furnace of claim 3, wherein further comprising metal castings with sand cores in the fluid bed of granular solids .

6. (Amended) The fluid bed reactor or furnace of claim 4, wherein the metal parts are of aluminum.

7. (Amended) The fluid bed reactor or furnace of claim 5, wherein the metal castings are of aluminum.

Please add claims 12-25 in the following manner:

12. (New) A method for heat treating metal parts, the method comprising:

providing a fluid bed reactor or furnace having a gas phase distributor that include a gas phase piping array discharging into a fluid bed of granular solids through a plurality of tuyeres coupled to and mounted beneath the piping array in a vertical elevation such that the granular solids below the piping array are fluidized thereby causing the fluidizing gas in the piping array to indirectly heat the fluidized bed prior to entering the fluidized bed through the tuyeres; and

feeding the metal parts to the fluidized bed for heat treatment.

13. (New) The method of claim 12, wherein the gas phase distributor discharges the fluidizing gas through openings or ports in a bottom portion of the piping array.

14. (New) The method of claim 12, wherein the gas phase distributor further comprises a heat exchanger in a feed line to the gas phase distributor such that the heat exchanger location is above the fluidizing gas distribution ports and submerged in the fluidized solids, thereby permitting indirect heat transfer from the fluidizing gas prior to the gas phase distributor.

15. (New) The method of claim 12, wherein the metal parts are of aluminum.

16. (New) The method of claim 12, wherein the fluidizing gas is fuel combusted with air.

17. (New) The method of claim 16, wherein the fuel is a gaseous fuel.

18. (New) The method of claim 16, wherein the fuel is a liquid fuel.

19. (New) A method for debonding sand cores from metal castings, the method comprising:

providing a fluid bed reactor or furnace having a gas phase distributor that include a gas phase piping array discharging into a fluid bed of granular solids through a plurality of tuyeres coupled to and mounted beneath the piping array in a vertical elevation such that the granular solids below the piping array are fluidized thereby causing the fluidizing gas in the piping array to indirectly heat the fluidized bed prior to entering the fluidized bed through the tuyeres; and

feeding the metal castings having sand cores to the fluidized bed for debonding.

20. (New) The method of claim 19, wherein the gas phase distributor discharges the fluidizing gas through openings or ports in a bottom portion of the piping array.

21. (New) The method of claim 19, wherein the gas phase distributor further comprises a heat exchanger in a feed line to the gas phase distributor such that the heat exchanger location is above the fluidizing gas distribution ports and submerged in the fluidized solids, thereby permitting indirect heat transfer from the fluidizing gas prior to the gas phase distributor.

22. (New) The method of claim 19, wherein the metal parts are of aluminum.

23. (New) The method of claim 19, wherein the fluidizing gas is fuel combusted with air.

24. (New) The method of claim 23, wherein the fuel is a gaseous fuel.

25. (New) The method of claim 23, wherein the fuel is a liquid fuel.